

Date: February 8, 2002

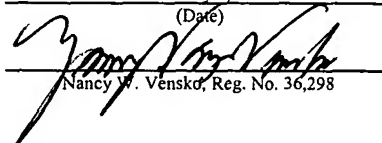
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Luyten, et al.
Appl. No. : 10/028,051
Filed : December 19, 2001
For : METHOD OF
MODULATING TISSUE
GROWTH USING FRZB
PROTEIN
Examiner : Unknown
Group Art Unit : Unknown

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first class mail in an envelope addressed to: United States Patent and Trademark Office PO Box 2327 Arlington, VA 22202, on

February 8, 2002

(Date)


Nancy W. Vensko, Reg. No. 36,298

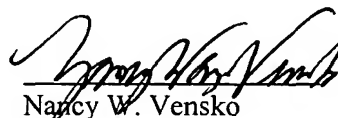
TRANSMITTAL LETTER

United States Patent and Trademark Office
PO Box 2327
Arlington, VA 22202
ATTENTION: APPLICATION BRANCH

Dear Sir:

Enclosed for filing in the above-identified application are:

- (X) An Information Disclosure Statement.
- (X) A PTO Form 1449 with sixty six (66) references.
- (X) The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.
- (X) Return prepaid postcard.


Nancy W. Vensko
Registration No. 36,298
Attorney of Record

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Luyten, et al.) Group Art Unit: Unknown
App. No. : 10/028,051)
Filed : December 19, 2001)
For : METHOD OF)
MODULATING TISSUE)
GROWTH USING FRZB)
PROTEIN)
Examiner : Unknown)

INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office
PO Box 2327
Arlington, VA 22202

Dear Sir:

Enclosed is form PTO-1449 listing references that are also enclosed. This Information Disclosure Statement is being filed within three months of the filing date of this application or upon filing if this is a CPA or RCE, and no fee is required in accordance with 37 C.F.R. § 1.97(b)(1), (b)(2), or (b)(4).

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 8/7/02

By: Nancy W. Verisko

Nancy W. Verisko
Registration No. 36,298
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(805) 547-5585

INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

NIH133.1CPC1

10/028,051

(USE SEVERAL SHEETS IF NECESSARY)

APPLICANT

Luyten, et al.

FILING DATE

December 19, 2001

GROUP

Unknown

U.S. PATENT DOCUMENTS

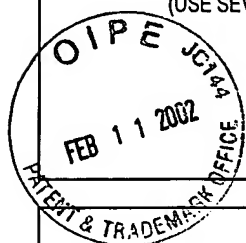
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1.	6,133,232	10/17/00	De Robertis, et al.			
	2.	5,578,569	11/26/1996	Tam			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
	3.	WO 96 14335	17.05.96	PCT			YES	NO
	4.	WO 97 48275 A	24.12.97	PCT				

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

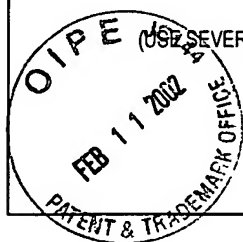
EXAMINER INITIAL		
	5.	Adler, P. N., et al. (1990) Molecular Structure of <i>frizzled</i> , a <i>Drosophila</i> Tissue Polarity Gene. <i>Genetics</i> 126:401-416.
	6.	Aebersold, R. H., et al. (1987) Internal amino acid sequence analysis of proteins separated by one- or two-dimensional gel electrophoresis after <i>in situ</i> protease digestion on nitrocellulose. <i>Proc. Natl. Acad. Sci. USA</i> 84:6970-6974.
	7.	Bhanot, P., et al. (1996) A new member of the <i>frizzled</i> family from <i>Drosophila</i> functions as a Wingless receptor. <i>Nature</i> 382:225-230.
	8.	Bouwmeester T., et al. (1996) Cerberus is a head-inducing secreted factor expressed in the anterior endoderm of Spemann's organizer. <i>Nature</i> 382:595-601.
	9.	Bowie, J. U., et al. (1990) Deciphering the Message in Protein Sequences: Tolerance to Amino Acid Substitutions. <i>Science</i> 247:1306-1310.
	10.	Carnac, G., et al. (1996) The homeobox gene <i>Siamois</i> is a target of the Wnt dorsalisation pathway and triggers organiser activity in the absence of mesoderm. <i>Development</i> 122:3055-3065.
	11.	Chan, S. D. H., et al. (1992) Two Homologs of the <i>Drosophila</i> Polarity Gene <i>frizzled</i> (<i>fz</i>) Are Widely Expressed in Mammalian Tissues. <i>J. Biol. Chem.</i> 267(35):25202-25207.
	12.	Chang, J. T., et al. (1999) Cloning and characterization of a secreted frizzled-related protein that is expressed by the retinal pigment epithelium. <i>Human Mol. Genetics</i> 8(4):575-583.
	13.	Chang, S.C., et al. (1994) Cartilage-derived Morphogenetic Proteins. <i>J. Biol. Chem.</i> 269(45):28227-28234.
	14.	Christian, J. L., et al. (1993) Interactions between <i>Xwnt-8</i> and Spemann organizer signaling pathways generate dorsoventral pattern in the embryonic mesoderm of <i>Xenopus</i> . <i>Genes & Development</i> 7:13-28.
	15.	Cui, Y., et al. (1995) <i>Xwnt-8b</i> : a maternally expressed <i>Xenopus</i> <i>Wnt</i> gene with a potential role in establishing the dorsoventral axis. <i>Development</i> 121:2177-2186.
	16.	De Robertis, E. M., et al. (1996) A common plan for dorsoventral patterning in Bilateria. <i>Nature</i> 380:37-40.
	17.	Epifano, O., et al. (1995) Coordinate expression of the three zona pellucida genes during mouse oogenesis. <i>Development</i> 121:1947-1956.
	18.	Eriebacher, A., et al. (1995) Toward a Molecular Understanding of Skeletal Development. <i>Cell</i> 80:371-378.
	19.	Finch, P. W., et al. (1997) Purification and molecular cloning of a secreted, Frizzled-related antagonist of Wnt action. <i>Proc. Natl Acad Sci. USA</i> 94:6770-6775.



INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

NIH133.1CPC1

10/028,051



APPLICANT

Luyten, et al.

FILING DATE

December 19, 2001

GROUP

Unknown

20.	Harland, R. M. (1991) In Situ Hybridization: An Improved Whole-Mount Method for <i>Xenopus</i> Embryos. <i>Meth. Cell Biol.</i> 36:685-695.
21.	Hoang, B., et al. (1996) Primary Structure and Tissue Distribution of FRZB, a Novel Protein Related to <i>Drosophila</i> Frizzled, Suggest a Role in Skeletal Morphogenesis. <i>J. Biol. Chem.</i> 271(42):26131-26137.
22.	Hoppler, S., et al. (1996) Expression of a dominant-negative Wnt blocks induction of MyoD in <i>Xenopus</i> embryos. <i>Genes & Development</i> 10:2805-2817.
23.	Kao, K. R., et al. (1988) The Entire Mesodermal Mantle Behaves as Spemann's Organizer in Dorsoanterior Enhanced <i>Xenopus laevis</i> Embryos. <i>Develop. Biol.</i> 127:64-77.
24.	Kay, B. K. (1991) Injection of Oocytes and Embryos. <i>Methods Cell Biol.</i> 36:663-669.
25.	Lemaire, P., et al. (1995) Expression Cloning of <i>Siamois</i> , a <i>Xenopus</i> Homeobox Gene Expressed in Dorsal-Vegetal Cells of Blastulae and Able to Induce a Complete Secondary Axis. <i>Cell</i> 81:85-94.
26.	Leyns, L., et al. (1997) Frzb-1 Is a Secreted Antagonist of Wnt Signaling Expressed in the Spemann Organizer. <i>Cell</i> 88:747-756.
27.	Luyten, F. P., et al. (1988) Insulin-like Growth Factors Maintain Steady-State Metabolism of Proteoglycans in Bovine Articular Cartilage Explants. <i>Archives of Biochem. and Biophys.</i> 267(2):416-425.
28.	Luyten, F. P., et al. (1989) Purification and Partial Amino Acid Sequence of Osteogenin, a Protein Initiating Bone Differentiation. <i>J. Biol. Chem.</i> 264(23):13377-13380.
29.	Luyten, F. P., et al. (1994) Recombinant Bone Morphogenetic Protein-4, Transforming Growth Factor- β_1 , and Activin A Enhance the Cartilage Phenotype of Articular Chondrocytes <i>in Vitro</i> . <i>Exper. Cell Res.</i> 210:224-229.
30.	Marieb, E. N. (1992) In, Human Anatomy and Physiology. The Benjamin/Cummings Publ. Co., 2nd Ed., 373-375.
31.	Mayr, T., et al. (1997) Fritz: a secreted frizzled-related protein that inhibits Wnt activity. <i>Mech. Develop.</i> 63:09-125.
32.	Melkonyan, H. S., et al. (1997) SARPs: a family of secreted apoptosis-related proteins. <i>Proc. Natl. Acad. Sci. USA</i> 94:13636-13641.
33.	Moon, R. T. (1993) In Pursuit of the Functions of the <i>Wnt</i> Family of Developmental Regulators: Insights from <i>Xenopus laevis</i> . <i>BioEssays</i> 15(2):91-97.
34.	Moos, M., Jr., et al. (1995) Anti-Dorsalizing Morphogenetic Protein is a novel TGF- β homolog expressed in the Spemann organizer. <i>Development</i> 121:4293-4301.
35.	Moos, M., Jr., et al. (1988) Reproducible High Yield Sequencing of Proteins Electrophoretically Separated and Transferred to an Inert Support. <i>J. Biol. Chem.</i> 263(13):6005-6008.
36.	Muthukumaran, N., et al. (1985) Comparison of Bone Inductive Proteins of Rat and Porcine Bone Matrix. <i>Biochem. Biophys. Res. Comm.</i> 131(1):37-41.
37.	Nardi, J. B., et al. (1976) Polarity and gradients in lepidopteran wing epidermis. <i>J. Embryol. exp. Morph.</i> 36(3):489-512.
38.	Nathan, C. and Sporn, M. (1991) Cytokines in Context. <i>J. Cell Biol.</i> 113(5):981-986.
39.	Nusse, R. and Varmus, H. E. (1992) <i>Wnt</i> Genes. <i>Cell</i> 69:1073-1087.
40.	Paralkar, V. M., et al. (1989) Affinity of Osteogenin, an Extracellular Bone Matrix Associated Protein Initiating Bone Differentiation, for Concanavalin A. <i>Biochem. Biophys. Res. Comm.</i> 160(2):419-424.
41.	Parr, B. A. and McMahon, A. P. (1994) <i>Wnt</i> genes and vertebrate development. <i>Cur. Opin. Genet. Develop.</i> 4:523-528.
42.	Pelton, R. W., et al. (1989) Expression of transforming growth factor β_2 RNA during murine embryogenesis. <i>Development</i> 106:759-767.
43.	Rattner, A., et al. (1997) A family of secreted proteins contains homology to the cysteine-rich ligand-binding domain of frizzled receptors. <i>Proc. Nat'l. Acad. Sci. USA</i> 94:2859-2863.
44.	Richter, K., et al. (1988) Gene expression in the embryonic nervous system of <i>Xenopus laevis</i> . <i>Proc. Natl. Acad. Sci. USA</i> 85:8086-8090.

INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

NIH133.1CPC1

10/028,051

(USE SEVERAL SHEETS IF NECESSARY)

APPLICANT

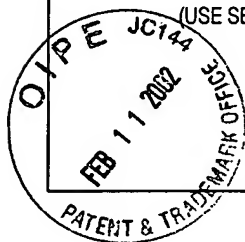
Luyten, et al.

FILING DATE

December 19, 2001

GROUP

Unknown



45.	Sambrook, J., et al. (November 1989) Molecular Cloning: A Laboratory Manual Second Edition Vols. 1, 2 and 3. Cold Spring Harbor Laboratory Press: Cold Spring Harbor, New York USA Pgs. 16.2, 17.2
46.	Sato, S. M. and Sargent, T. D. (1991) Localized and inducible expression of <i>Xenopus-posterior (Xpo)</i> , a novel gene active in early frog embryos, encoding a protein with a 'CCHC' finger domain. <i>Development</i> 112:747-753.
47.	Scales, J. B., et al. (1990) Two Distinct <i>Xenopus</i> Genes with Homology to MyoD1 Are Expressed before Somite Formation in Early Embryogenesis. <i>Mol. Cell. Biol.</i> 10(4):1516-1524.
48.	Shirozu, M., et al. (1996) Characterization of Novel Secreted and Membrane Proteins Isolated by the Signal Sequence Trap Method. <i>Genomics</i> 37:273-280.
49.	Slack, J. M. W. (1994) Inducing factors in <i>Xenopus</i> early embryos. <i>Cur. Biol.</i> 4(2):116-126.
50.	Smith, W. C. and Harland, R. M. (1991) Injected Xwnt-8 RNA Acts Early in <i>Xenopus</i> Embryos to Promote Formation of a Vegetal Dorsalizing Center. <i>Cell</i> 67:753-765.
51.	Smith, W. C., et al. (1995) A <i>nodal</i> -Related Gene Defines a Physical and Functional Domain within the Spemann Organizer. <i>Cell</i> 82:37-46.
52.	Sokol, S., et al. (1991) Injected Wnt RNA Induces a Complete Body Axis in <i>Xenopus</i> Embryos. <i>Cell</i> 67:741-752.
53.	Tempst, P., et al. (1990) Internal sequence analysis of proteins separated on polyacrylamide gels at the submicrogram level: Improved methods, applications and gene cloning strategies. <i>Electrophoresis</i> 11:537-553.
54.	Tsukamoto, A. S., et al. (1988) Expression of the <i>int-1</i> Gene in Transgenic Mice Is Associated with Mammary Gland Hyperplasia and Adenocarcinomas in Male and Female Mice. <i>Cell</i> 55:619-625.
55.	van Leeuwen, F. and Nusse, R. (1995) Oncogene activation and oncogene cooperation in MMTV-induced mouse mammary cancer. <i>Cancer Biol.</i> 6:127-133.
56.	Vinson, C. R. and Adler, P. N. (1987) Directional non-cell autonomy and the transmission of polarity information by the <i>frizzled</i> gene of <i>Drosophila</i> . <i>Nature</i> 329:549-551.
57.	Vinson, C. R., et al. (1989) A <i>Drosophila</i> tissue polarity locus encodes a protein containing seven potential transmembrane domains. <i>Nature</i> 338:263-264.
58.	Vukicevic, S., et al. (1994) Developing Human Lung and Kidney are Major Sites for Synthesis of Bone Morphogenetic Protein-3 (Osteogenin). <i>J. Histochem. Cytochem.</i> 42(7):869-875.
59.	Wadsworth, W. G. and Hedgecock, E. M. (1996) Hierarchical guidance cues in the developing nervous system of <i>C. elegans</i> . <i>BioEssays</i> 18(5):355-362.
60.	Wang, S., et al. (1995) DNA Sequencing from Single Phage Plaques Using Solid-Phase Magnetic Capture. <i>BioTechniques</i> 18(1):130-135.
61.	Wang, S., et al. (1997) Frzb, a Secreted Protein Expressed in the Spemann Organizer, Binds and Inhibits Wnt-8. <i>Cell</i> 88:757-766.
62.	Wang, Y., et al. (1996) A Large Family of Putative Transmembrane Receptors Homologous to the Product of the <i>Drosophila</i> Tissue Polarity Gene <i>frizzled</i> . <i>J. Biol. Chem.</i> 271(8):4468-4476.
63.	Wolf, V., et al. (1997) DDC-4, an apoptosis-associated gene, is a secreted frizzled relative. <i>FEBS Letters</i> 417:385-389.
64.	Yang-Snyder, J., et al. (1996) A <i>frizzled</i> homolog functions in a vertebrate <i>Wnt</i> signaling pathway. <i>Current Biology</i> 6(10):1302-1306.
65.	Zhao, Z., et al. (1995) A Human Homologue of the <i>Drosophila</i> Polarity Gene <i>frizzled</i> Has Been Identified and Mapped to 17q21.1. <i>Genomics</i> 27:370-373.
66.	Zheng, L., et al. (1995) <i>frizzled</i> regulates mirror-symmetric pattern formation in the <i>Drosophila</i> eye. <i>Development</i> 121:3045-3055.

EXAMINER

DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.